BEFORE
THE PUBLIC SERVICE COMMISSION OF
SOUTH CAROLINA
DOCKET NO. 2021-1-E

In the Matter of Annual Review of Base Rates for Decrease in Residential and Lighting Customer Fuel Costs and for Increase in General Service Non-Demand and General Service Demand Customer Fuel Costs for Duke Energy Progress, LLC	)	**AMENDED DIRECT TESTIMONY OF JASON D. MARTIN FOR DUKE ENERGY PROGRESS, LLC**

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Jason D. Martin, and my business address is 40 West Broad Street, Suite 690, Greenville, SC 29601.

Q. BY WHOM AND IN WHAT CAPACITY ARE YOU EMPLOYED?

A. I am Director of Strategy, Policy, and Strategic Investment for South Carolina at Duke Energy Corporation ("Duke Energy"). I am responsible for the development and execution of strategy and policy support related to distributed energy technology for Duke Energy's South Carolina retail franchises, including Duke Energy Progress, LLC ("DEP" or the "Company") and Duke Energy Carolinas, LLC ("DEC"). This includes evaluation of legislation and regulation, and implementation of customer programs such as those associated with Act 236, the South Carolina Distributed Energy Resource Act of 2014.

Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A. I received a Bachelor of Science degree in Electrical and Computer Engineering at North Carolina State University. I have been employed at Duke Energy since 1987 working in the areas of Engineering, Customer Services, Large Account Management, and Distributed Energy Technologies.

Q. HAVE YOU TESTIFIED BEFORE THIS COMMISSION BEFORE?

A. Yes. I testified before this Commission in DEC's 2018, 2019, and 2020 fuel costs proceedings in Docket Nos. 2018-3-E, 2019-3-E, and 2020-3-E, respectively, and in DEP's 2019 and 2020 fuel costs proceedings in Docket No. 2019-1-E and 2020-1-E.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to provide support for the Distributed Energy Resource Program ("DERP") costs that are incorporated into the proposed fuel factors prepared by Witness Harrington. I will describe the nature of costs filed as well as any changes made to the DERP portfolio since the 2020 fuel proceeding.

Q. PLEASE DESCRIBE THE LEVELS OF SOLAR ADOPTION DEP HAS EXPERIENCED THROUGH COMPLIANCE WITH ACT 236.

A. Since January 1, 2015, DEP has seen significant growth in solar adoption as a result of implementing the incentives and programs for compliance with Act 236 and the extension of incentives through Act 62. The results of the implementation are shown below in Table 1. The Company has encouraged solar adoption through the Net Energy Metering ("NEM") incentive, Solar Rebate Program, and other DERP efforts discussed later in my testimony. As of March 2020, the Company has met the renewable generation goals under Act 236.

Table 1: DEP Solar Adoption by Implementing Act 236, as of March 1, 2021[1]

		ACT 236 Goal	Capacity Installed	% of Goal
Tier I	Utility Scale Solar (1MW – 10MW)	13	15	115%
Tier II	Customer Scale Solar (<1MW)[2]	13	7.7	1283%
	Small Scale Solar (<20kW)	3	12.4	413%

Notes
1. All values in MW-AC
2. Customer Scale Solar Goal is inclusive of Small Scale Solar Goal

Q. PLEASE DESCRIBE THE DERP COSTS THAT ARE INCLUDED IN THE REVIEW, ESTIMATED, AND BILLING PERIODS.

A. Pursuant to Commission Order No. 2015-515, the Company offers its customers a variety of programs to support solar development. As a result, the Company incurred DERP incremental and avoided costs totaling $4,444,255 in the period from March 1, 2020 through February 28, 2021 (the "review period"); anticipates incurring $1,764,598 during the period March 1, 2021 through June 30, 2021 (the "estimated period"); and projects to incur $5,408,406 in the period July 1, 2021 through June 30, 2022 (the "billing period").

These costs represent the avoided and incremental costs associated with the Company's approved DERP offerings, including 1) Purchased Power Agreements executed to fulfill the Company's utility-scale solar goals under Act 236; 2) Distributed Energy Resource ("DER") NEM Incentive; 3) Solar Rebate Program; 4) Carrying Costs on Deferred Solar Rebate Amounts; 5) Shared Solar Program; 6) NEM Avoided Capacity Costs; 7) NEM Meter Costs; and 8) General and Administrative Expenses, including incremental labor costs as a direct result of DERP, IT and billing enhancements, and other administrative costs associated with delivering these new programs to customers. Table 2 is an itemization of actual and expected DERP costs.

Table 2: DEP DERP Cost Summary - Review, Estimated, and Billing Periods

Cost Type	Review Period 3/1/20-2/28/21	Forecast Period 3/1/21-6/30/21	Billing Period 7/1/21-6/30/22
DERP Incremental Costs			
Purchased Power Agreements	$ 44,435	$ 13,956	$ 34,523
DER NEM Incentive	1,674,325	710,088	2,303,298
Solar Rebate Program - Amortization	587,885	206,052	657,479
Solar Rebate Program - Carrying Costs	483,009	159,880	491,637
Shared Solar Program	57,591	16,650	44,745
NEM Avoided Capacity Costs	18,454	1,883	6,285
NEM Meter Costs	125,799	46,024	143,917
General and Administrative Expenses	301,384	127,577	358,001
Interest on under-collection due to cap	314	119	530
Total DER Incremental Costs	$ 3,293,196	$ 1,282,229	$ 4,040,415
DERP System Avoided Cost - Energy & Capacity			
Purchased Power Agreements	$ 1,066,069	$ 448,029	$ 1,268,827
Shared Solar Program	84,990	34,340	99,164
Total DERP Avoided Costs	$ 1,151,059	$ 482,369	$ 1,367,991
Total Incremental and Avoided Cost	**$ 4,444,255**	**$ 1,764,598**	**$ 5,408,406**

Sources
Incremental Costs: Harrington Exhibit 9 & 11
Avoided Costs: Harrington Exhibit 13 & 14

Q. PLEASE DESCRIBE THE COMPANY'S DER NEM INCENTIVE AND COSTS.

A. The DER NEM Incentive is a credit available to eligible net energy metering customer-generators that enables the customer-generator to receive full retail rate compensation for each kilowatt-hour (kWh) generated by their solar facility.

The DER NEM Incentive approximates the difference between (a) the value of a NEM Distributed Energy Resource, as computed using the methodology approved in Docket No. 2014-246-E, and (b) the utility's retail rate for that customer. Settling Parties in Docket No. 2014-246-E agreed that the DER NEM Incentive shall be treated as an incremental cost, as defined in S.C. Code Ann. § 58-39-140, effectively socializing the cost

of the DER NEM Incentive to all retail customers as a component of the utilities' respective DER programs. Act 62 removed the statutory capacity cap on NEM as set forth in Act 236 and made NEM available to all customer-generators who apply before June 1, 2021, according to all the terms and conditions provided to all parties in Commission Order No. 2015-194.

As shown on the "DER NEM Incentive" line in Table 2 above, the total costs associated with this incentive are expected to grow significantly in the Billing Period. This growth is related to an expected increase in customers who have elected service under Rider RNM due to the availability of the Solar Rebate Program and the NEM incentive, discussed below.

Q. PLEASE DESCRIBE THE GROWTH OF CUSTOMER PARTICIPATION IN NET ENERGY METERING.

A. Participation in net energy metering has increased significantly since 2015 as a result of the decrease in the acquisition costs of solar, in addition to the availability of the Company's Solar Rebate Program and the NEM Incentive. On May 16, 2019, Act 62 was signed into law, which removed the 2% NEM capacity limit and extended provisions of NEM pursuant to Order No. 2015-194, requiring the Company make NEM available to all customer-generators who apply after May 16, 2019 and before June 1, 2021. Table 3 details total NEM participation as of February 28, 2021.

Table 3: DEP Net Energy Metering – Total Participation

Rider RNM	As of 2/28/2021	
	Number of Applications	Capacity in MW (AC)
Applications Approved	1,780	21.63
Applications Withdrawn	18	0.17
In Process and Installed	**1,762**	**21.46**
Installed	1,595	19.83
In Process	167	1.64

Q. PLEASE DESCRIBE THE GROWTH OF THE DER NEM INCENTIVE.

A. The growth of the DER NEM Incentive is attributed to an increase in interconnected, operational facilities participating in net metering during the review, estimated, and billing periods. Table 4, below, depicts the number of customers (and the associated kilowatts (kW-AC)) who have or are expected to energize their solar facilities and participate in net metering.

Table 4: DEP Net Energy Metering Capacity Connected - Review, Estimated, and Billing[1]

Rider RNM and Rider NM-SC	Review Period	Estimated Period	Billing Period
	3/1/20-2/28/21	3/1/21-6/30/21	7/1/21-6/30/22
Capacity (kW-AC)	20,097	21,443	22,835
# of Customers	1,620	1,734	1,859

Notes:
1. These values represent cumulative capacity and number of customers on the last day of each period.
2. Capacity presented as nameplate

Q. COMMISSION ORDER 2015-194 REQUIRES THAT THE VALUE OF NEM DISTRIBUTED ENERGY RESOURCES IS COMPUTED ANNUALLY. WHAT IS THE 2021 VALUE AND HOW DID YOU ARRIVE AT THAT NUMBER?

A. Through applying the avoided cost methodology and rates recently approved by the Commission in Order Nos. 2019-881(A) and 2020-315(A) (issued on January 2, 2020 and April 17, 2020, respectively), as well as updated input assumptions, the Company has updated the 2021 value of NEM Distributed Energy Resources to $0.02446 per kWh for Schedules RES and R-TOUD, $0.02444 for Schedule SGS, and $0.02448 for all other schedules. Table 5, below, lists the components used to determine the value of NEM Distributed Energy Resources

and their value. The calculation is consistent with the methodology approved in Order No. 2015-194. The methodology includes all categories of potential benefits or costs to the utility system that are capable of quantification or possible quantification in the future.

Table 5: Value of NEM Distributed Energy Resource, by Component

Components of NEM Distributed Energy Resource Value	Component Value ($/kWh) Residential PV[1]	Component Value ($/kWh) SGS PV[1]	Component Value ($/kWh) Large PV[1]
Marginal Energy Cost	$0.024785	$0.024795	$0.024801
Marginal Capacity Cost	$0.001767	$0.001738	$0.001763
Ancillary Services	($0.002389)	($0.002390)	($0.002390)
Transmission and Distribution ("T&D") Capacity	$0.000000	$0.000000	$0.000000
Avoided Criteria Pollutants[2]	$0.000027	$0.000028	$0.000030
Avoided CO2 Emission Cost (currently zero)	$0.000000	$0.000000	$0.000000
Fuel Hedge[3]	$0.000000	$0.000000	$0.000000
Utility Integration & Interconnection Costs	$0.000000	$0.000000	$0.000000
Utility Administration Costs	$0.000000	$0.000000	$0.000000
Environmental Costs	$0.000000	$0.000000	$0.000000
Subtotal	**$0.024190**	**$0.024170**	**$0.024204**
Line Losses[4]	$0.000272	$0.000271	$0.000271
Total Value NEM Distributed Energy Resource	**$0.024461**	**$0.024442**	**$0.024475**

1 "Residential PV" refers to a load shape reflecting generation installed by a residential customer. "SGS PV" refers to a load shape reflecting generation installed by a small commercial/industrial customer served under Small General Service Schedule SGS. "Large PV" refers to a load shape reflecting generation installed by a customer with higher consumption requirements and applies to all other nonresidential schedules. For the first time, the Company has separated the values for residential customers ("Residential PV") and small commercial/industrial customers ("SGS PV") as a result of available actual metered solar load profile data for the residential class. The Company continues to utilize third-party solar load profile data for non-residential customers.

2 Avoided Criteria Pollutants reflects NOx and SOx that have been separately identified from approved marginal energy costs.

3 Pursuant to the Settlement Agreement reached in DEP's 2016 annual fuel proceeding (Docket No. 2016-3-E), the Company has calculated the hedge value and determined that no fuel hedge exists; therefore, the value is zero.

4 Line loss factors are 1.281% for marginal energy and 1.857% for marginal capacity per DEP's updated 2018 line loss analysis based upon 2020 cost of service.

Q. PLEASE EXPLAIN WHY SOME OF THE COMPONENTS ARE VALUED AT ZERO.

A. The Company has identified the benefits or costs of several of the components of the Value of NEM DER as zero either because insufficient data and analysis exists to quantify the

cost or benefit of that component or because the Company believes the actual numerical value of that component is zero.

Q. DOES DEP ROUTINELY REVIEW THE COST AND BENEFIT COMPONENTS OF THE VALUE OF NEM OF DER CALCULATION?

A. Yes. As stated earlier, the Company has updated the Value of NEM DER calculation based on the recently-approved avoided cost methodology and avoided cost rates. Additionally, as the amount of installed customer-owned generation increases, it is important that the Company continually monitors its impact to ensure safe and reliable grid operations. Through this monitoring and analysis of the impact of NEM DER on the Company's system, new costs and benefits are identified. Those identified costs and benefits of NEM DER are then incorporated into the the Value of NEM DER calculation in the next year's fuel case.

Q. PLEASE DESCRIBE EXHIBIT 1 TO YOUR TESTIMONY.

A. Martin Exhibit 1 provides a redline of the Company's proposed 2021 net metering rider, Rider RNM, illustrating changes from the previous tariff. The only substantive change to the tariff is the updated value of NEM Distributed Energy Resources.

Q. PLEASE DESCRIBE THE STATUS OF THE COMPANY'S SOLAR REBATE PROGRAM.

A. The Company's solar rebate program was implemented to assist the Company in meeting its Customer Scale solar requirement (facilities 1,000 kW and less) under Act 236. The Company has made available two solar rebate programs for its customers: the Small Solar Rebate Program and the Large Solar Rebate Program. Both provide a qualified customer with a rebate of $1.00 per watt-dc, and $1.50 per watt-dc for non-profit organizations, upon

successful energization of a solar facility that conforms to the sizing requirements outlined in Act 236. As shown in Table 6, below, interest in the solar rebate, as measured by solar rebate applications received, has exceeded available capacity per Act 236 goals.

Table 6: DEP Solar Rebate Program Capacity Status, as of March 1, 2021

Solar Facility Size	ACT 236 Goal	Rebate Applications Received	Rebate Applications Accepted	Rebate Applications Paid
"Small" - Up to 20kW-AC	At least 3,250 kW	4,075 kW	3,885 kW	96%
"Large" - 20.01kW-AC - 1,000kW-AC	9,750 kW	12,250 kW	9,150 kW	
Total	13,000 kW	16,325 kW	13,000 kW	

*All Values in kW-AC

As a result of receiving applications in excess of available capacity, the Company created a waiting list for customers to be utilized as additional capacity becomes available due to a project withdrawing or no longer meeting the criteria to receive a rebate.

Q. PLEASE DESCRIBE THE DERP COSTS ASSOCIATED WITH THE COMPANY'S SOLAR REBATE PROGRAM.

A. The incremental costs associated with the Solar Rebate Program and included in this filing are the amortization of rebates paid, carrying costs on deferred amounts, and general and administrative expenses required to manage the program, as shown in Table 2. These values in Table 2 reflect rebate amortization amounts and carrying cost amounts which have been adjusted as prescribed in Order No. 2019-341.

Q. PLEASE PROVIDE AN OVERVIEW AND STATUS OF THE COMPANY'S SHARED SOLAR PROGRAM.

A. The Company's Shared Solar Program, which launched in July 2018, is a means for retail customers to subscribe to and share in the economic benefits of one renewable energy

facility. Customers are able to apply to the program using an online application which shows real-time capacity available in the program and assists them in determining their appropriate subscription size. Once enrolled, in addition to their regular energy bill, participants also pay a monthly shared solar subscription fee. That fee funds their share of supporting a centrally-located solar energy facility. In exchange, they receive a monthly energy credit from the Company equal to the amount of solar energy produced by their share of the solar facility. In order to increase accessibility to the program, DEP also offers a low-moderate income ("LMI") customer program, through which DEP will waive the application fee and initial subscription charge (a $120 value) for 200 LMI qualified customers.

The Company dedicated 1,000 kW of a Purchased Power Agreement (entered into pursuant to the utility-scale goals of Act 236) to the Shared Solar Program. Table 7 below, provides participation details for the program.

Table 7: DEP Shared Solar Program Status, as of March 1, 2021

Program Type	Total Available Capacity (kW-AC)	Number of Customers Subscribed	Total kW-AC Subscribed	% Subscribed
Standard Offering	600	82	600	100%
Low-Moderate Income (LMI)	400	200	400	100%

Q. WHAT IS THE CURRENT STATUS OF THE SHARED SOLAR PROGRAM UNDER ACT 236?

A. The Company has fully subscribed the Shared Solar program implemented under Act 236. The program adoption by customers was completed with filling the Low-Moderate Income

portion of the program by implementing the changes approved by the PSC to provide more opportunity to LMI customers. For the LMI customers, a waiting list has been established in the event capacity becomes available within the LMI designated capacity. The outreach to all customers through various methods proved beneficial in promoting the program and soliciting participating customers.

Q. PLEASE DESCRIBE THE DERP COSTS ASSOCIATED WITH THE COMPANY'S SHARED SOLAR PROGRAM.

A. The cost associated with the Shared Solar Program, as set forth in Table 2 include the following incremental cost components: the amount of subsidy utilized to lower subscription fees for the program, general and administrative costs of the program, and costs of Shared Solar purchased power agreements in excess of avoided cost. Table 2 also includes the following avoided costs: avoided cost amounts paid for the purchase of power from participants in the program.

Q. PLEASE DESCRIBE THE RESULTS OF THE COMPANY'S REQUEST FOR PROPOSALS OF UTILITY-SCALE SOLAR FACILITIES AND THE ASSOCIATED DERP COSTS.

A. The Company has executed two PPAs totaling 15,000 kW (AC), with 1,000 kW dedicated to the Shared Solar Program. The first facility became operational in December 2017 and the second facility became operational in March 2020. Table 2 sets forth the incremental and avoided costs associated with these PPAs.

Q. PLEASE DESCRIBE THE COMPANY'S EFFORTS TO COMMUNICATE WITH STAKEHOLDERS ABOUT DER PROGRAMS AND PROGRAM CHANGES IN THE PAST YEAR.

A. Since the Commission approved the Company's DER Program application in 2015, the Company has utilized various communication and outreach tools to ensure that solar stakeholders and retail customers have access to information about the Company's programs and are able to communicate with representatives from the Company about the programs. For example, the Company has: 1) conducted quarterly DER Collaborative meetings with a diverse group of stakeholders representing the environmental community, low income community, solar installers, solar developers, and regulators; 2) provided a summary of net metering adoption on the Duke Energy website; 3) held a number of events and marketing campaigns for the Shared Solar Program (see additional detail above); and 4) provided call center support to retail customers and solar installers via its Renewable Service Center, which is staffed with approximately twenty professionals. The Company uses these outreach efforts as well as regular communication to keep stakeholders and retail customers informed of the status of the program offerings and other developments related to its DER programs.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.